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APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
60/273,278	03/02/2001		150	SLA 1026P			

CONFIRMATION NO. 1694

## FILING RECEIPT

\*CC000000006177099\*

Scott C. Krieger, Patent Counsel  
Sharp Laboratories of America, Inc  
5750 NW Pacific Rim Boulevard  
Camas, WA 98607

Date Mailed: 06/13/2001

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## Applicant(s)

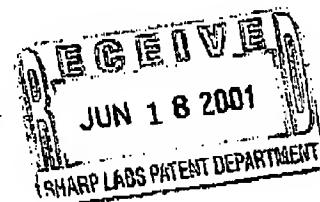
Srinivas Kandala, Vancouver, WA;

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Projected Publication Date: N/A

Non-Publication Request: No

Early Publication Request: No



## Title

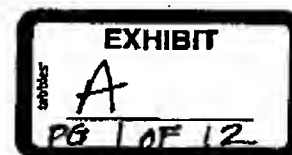
Methods and systems for recovering from non-responses within a TXOP

Data entry by : SALEEKUL, SIRILUCK

Team : OIPE

Date: 06/13/2001

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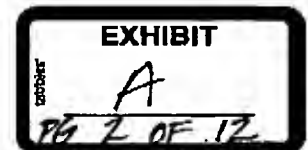
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EF 244380360 US

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

PROVISIONAL PATENT  
APPLICATION

Inventors: Srinivas Kandala

Serial No.: Not Yet Assigned

Attorney Docket No.  
SLA 1026P

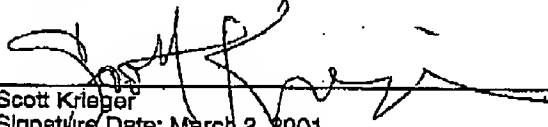
Filed: Herewith

Title: METHODS AND SYSTEMS FOR  
RECOVERING FROM  
NON-RESPONSES WITHIN  
A TXOPRECEIVED  
CENTRAL FAX CENTER

JAN 23 2006

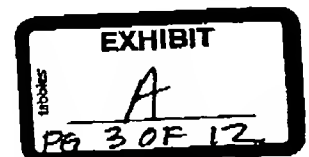
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Scott Krieger  
Signature Date: March 2, 2001Box PROVISIONAL PATENT APPLICATION  
Assistant Commissioner for Patents  
Washington, DC 20231**U.S. PROVISIONAL APPLICATION TRANSMITTAL  
AND COVER SHEET UNDER 37 C.F.R. § 1.51(c)(1)**

Transmittal-SLA1026P

1



Sir:

Transmitted herewith for filing is a provisional patent application identified as follows:

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Name and Registration

Number of Attorney:

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Attorney Docket No.:

SLA1026P

Title: METHODS AND SYSTEMS FOR RECOVERING FROM NON-RESPONSES WITHIN A TXOP

No. of pages In Specification: 12

Transmittal-SLA1026P

2



The filing fee for a Provisional Application pursuant to 37 C.F.R. § 1.16(k) (large entity) is \$150.00.

- ☒ Please charge Deposit Account No. 50-0803 in the amount of \$ 150.00.  
A duplicate copy of this authorization is enclosed.
- ☒ The Commissioner is hereby authorized to charge underpayment of any fees, or credit any overpayment associated with this communication to Deposit Account No. 50-0803.  
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Respectfully submitted,

Date: 3/2/01

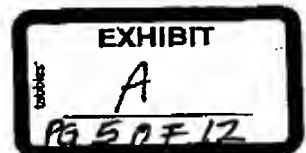
By:   
Scott C. Krieger  
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3



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PROVISIONAL  
PATENT APPLICATION

SLA Docket No. 1026P

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**UNITED STATES PROVISIONAL PATENT APPLICATION**

of

**SRINIVAS KANDALA**

for

**METHODS AND SYSTEMS FOR RECOVERING FROM NON-  
RESPONSES WITHIN A TXOP**

**Inventors:**

Srinivas Kandala, 19005 SE 19<sup>th</sup> Way, Vancouver, WA 98683

– Clark County

Direct all correspondence to: Scott C. Krieger, Reg. No. 42,768

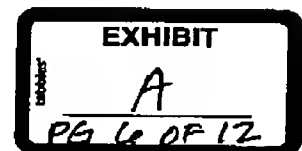
Scott C. Krieger

Patent Counsel

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**On Recovering from Non-responses within a TXOP assigned by  
HC in a CFB in IEEE 802.11e**

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Prior Art Reference: Hybrid Coordination Function (HCF) Frame Exchange and NAV Details,  
IEEE 802.11 doc # 2001/109r1

1. On slide #8 of the prior art reference, under "Recovery from Non-Responses", in the first bullet item, it has been stated:

If the addressed ESTA does not respond to RTS or QoS Data at SIFS, the TXOP holder may resume transmission at PIFS unless PHY reports CCA (busy).

The above does not specifically restrict transmitting to the recipient to whom the previous transmission has been made. As the next transmission is repeated within PIFS duration, the likelihood of a collision or a transmission failure is very high. Thus the recipient of the immediately previous (failed) transmission should be excluded from the list of possible recipients of the next transmission, should the TXOP holder decide to continue to use the given TXOP.

**2. NAV setting:**

If the TXOP holder does not resume transmission at PIFS, the TXOP terminates at DIFS (assuming CCA(idle)). If the HC allows the CFB to end, then the STAs would have a non-zero NAV. This will result in the channel not being used by any STA. The utilization of the channel can be improved upon by having the HC, if it desires to end a CFB, sending a CF-End frame (or any other appropriate control/management frame). This frame will signify the end of the CFB and all the STAs will reset their NAV to 0 and will be free to transmit under the usual rules of Contention Period/DCF.



doc.: IEEE 802.11-01/109r1

February 2001

# Hybrid Coordination Function (HCF) Frame Exchange and NAV Details

First version: 2000-02-07  
Revision 1: 2000-02-26

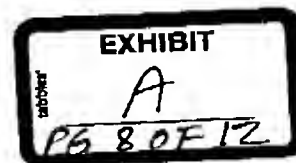
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Slide 1

Submission



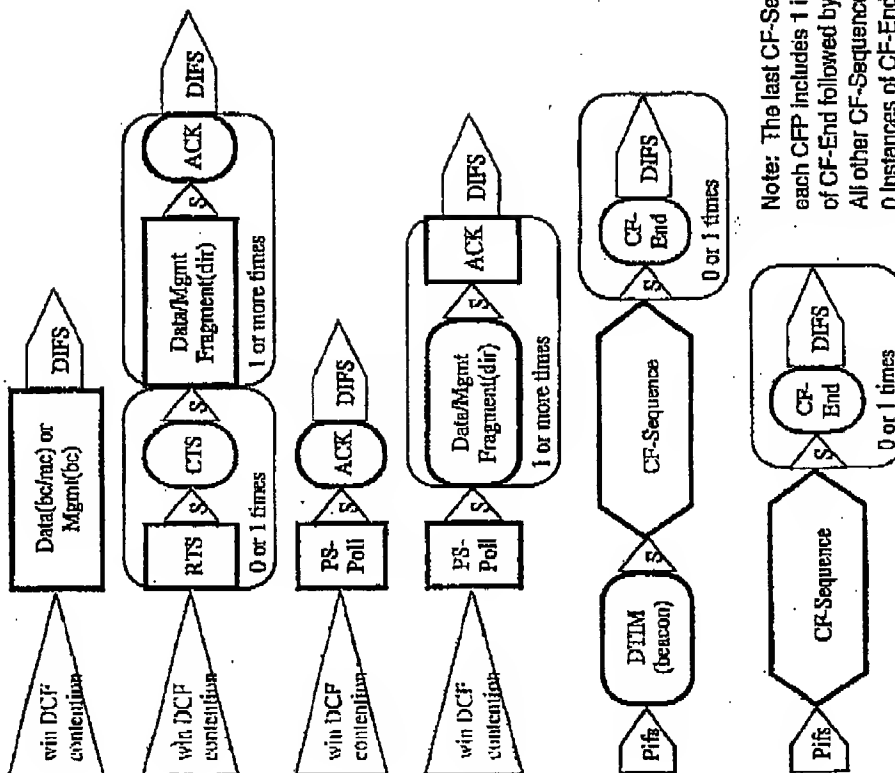


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doc.: IEEE 802.11-01/109r1

# Legacy Frame Exchange Sequences

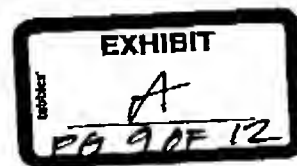
- To the right are the frame exchanges defined in Table 21 of 802.11-1999 illustrated using this symbology.



Submission

Slide 3

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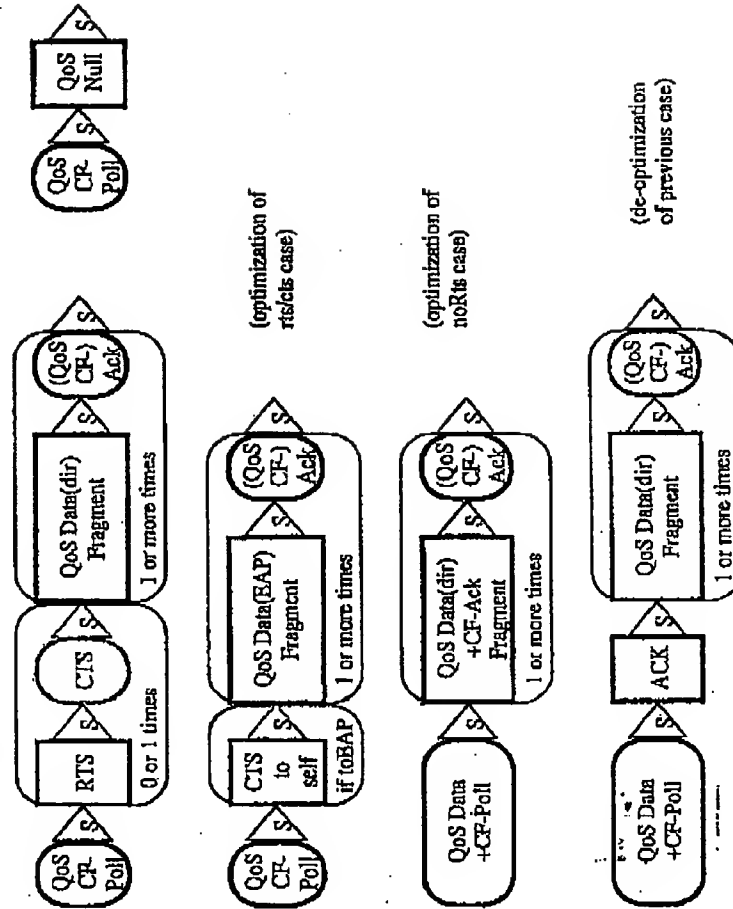
doc.: IEEE 802.11-01/109r1

# Start of TXOP Details

- There is one null and one non-null case for the start of a polled TXOP.
- There are three possible optimizations/deoptimizations of the non-null case.

Start of TxOp:

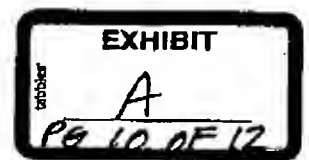
Null TxOp:



Submission

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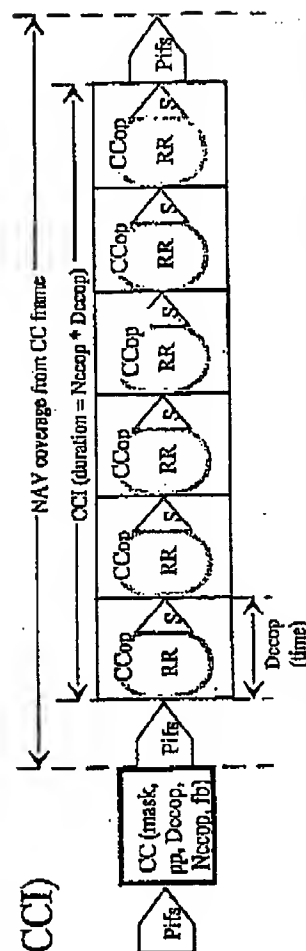
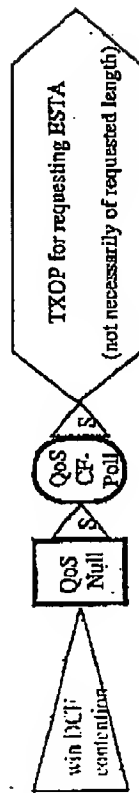


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doc.: IEEE 802.11-01/109r1

# TXOP Requests

- QoS Null with TS=1 can be used to activate or deactivate periodic polling under an admitted Tspec.
- QoS Null with TS=0 can be used to request an immediate TXOP longer than the current EDCF TXOP limit.
- CC defines a controlled contention interval (CCI) when WSTAs that need more bandwidth may send RR frames.



Submission

Slide 7

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EXHIBIT

A

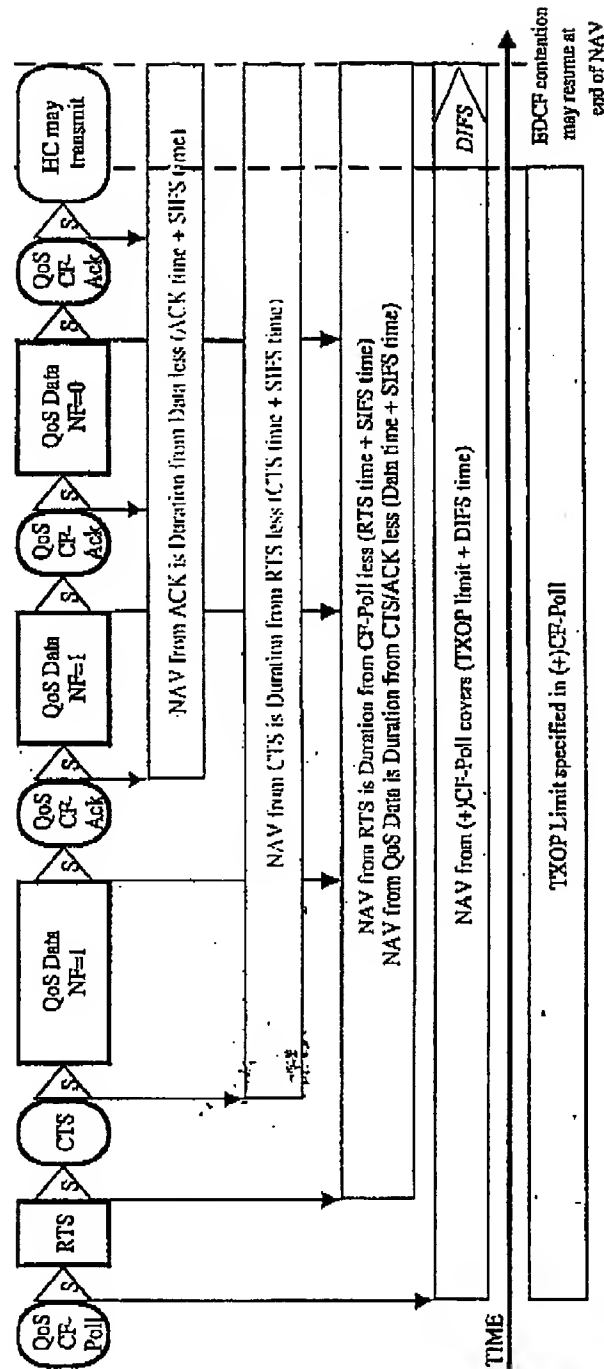
PG 11 OF 12

February 2001

doc.: IEEE 802.11-01/109r1

## NAV Usage During TXOP

- This diagram shows the periods covered by the NAV, based on Duration field values in the various frames of a TXOP during which the polled ESTA initiates several QoS Data frame exchanges.



Submission

Slide 9

Michael Fischer, Intersil

